



U.S. Department
of Transportation

400 Seventh St. S.W.
Washington, D.C. 20590

Pipeline and
Hazardous Materials
Safety Administration

**COMPETENT AUTHORITY CERTIFICATION
FOR A TYPE AF
FISSILE RADIOACTIVE MATERIALS PACKAGE DESIGN
CERTIFICATE USA/9239/AF, REVISION 16**

This certifies that the radioactive materials package design described below has been certified by the Competent Authority of the United States as meeting the regulatory requirements for a Type AF packaging for fissile radioactive materials as prescribed in the regulations of the International Atomic Energy Agency¹ and the United States of America².

1. Package Identification - Model Nos. MCC-3, MCC-4 and MCC-5.
2. Package Description and Authorized Radioactive Contents - as described in U.S. Nuclear Regulatory Commission Certificate of Compliance No. 9239, Revision 15 (attached).
3. Criticality -
 - a. Minimum Criticality Safety Index: 0.4
 - b. The maximum number of packages shall be determined in accordance with Table X of the IAEA's "Regulations for the Safe Transport of Radioactive Materials, 1996 Edition (Revised), No. TS-R-1 (ST-1 Revised).
4. General Conditions -
 - a. Each user of this certificate must have in his possession a copy of this certificate and all documents necessary to properly prepare the package for transportation.
 - b. Each user of this certificate, other than the original petitioner, shall register his identity in writing to the Radioactive Materials Branch (DHM-23), Office of Hazardous Materials Technology, Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation, Washington, D.C. 20590-0001.
 - c. This certificate does not relieve any consignor or carrier from compliance with any requirement of the Government of any country through or into which the package is to be transported.
5. Marking and Labeling - The package shall bear the marking USA/9239/AF in addition to other required markings and labeling.

¹ "Regulations for the Safe Transport of Radioactive Materials, 1996 Edition (Revised)", No. TS-R-1 (ST-1, Revised)," published by the International Atomic Energy Agency (IAEA), Vienna, Austria

² Title 49, Code of Federal Regulations, Parts 100 - 199, United States of America.

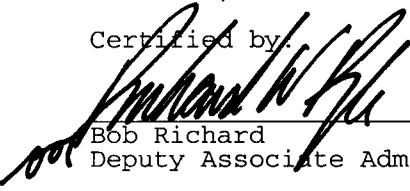
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CERTIFICATE USA/9239/AF, REVISION 16

6. Expiration Date - This certificate expires on March 31, 2012.

This certificate is issued in accordance with paragraph 814 and 816 of the IAEA Regulations and Sections 173.471 and 173.472 of Title 49 of the Code of Federal Regulations, in response to the February 12, 2007 petition by the Westinghouse, Columbia, SC and in consideration of other information on file in this Office.

Certified by:


Bob Richard

Deputy Associate Administrator for Hazardous Materials Safety

MAR 23 2007

(DATE)

Revision 16 - Issued to endorse U.S. Nuclear Regulatory Commission
Certificate of Compliance No. 9239, Revision 15.

**CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIAL PACKAGES**

1. a. CERTIFICATE NUMBER	b. REVISION NUMBER	c. DOCKET NUMBER	d. PACKAGE IDENTIFICATION NUMBER	PAGE	PAGES
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2. PREAMBLE

- a. This certificate is issued to certify that the package (packaging and contents) described in Item 5 below meets the applicable safety standards set forth in Title 10, Code of Federal Regulations, Part 71, "Packaging and Transportation of Radioactive Material."
- b. This certificate does not relieve the consignor from compliance with any requirement of the regulations of the U.S. Department of Transportation or other applicable regulatory agencies, including the government of any country through or into which the package will be transported.

3. THIS CERTIFICATE IS ISSUED ON THE BASIS OF A SAFETY ANALYSIS REPORT OF THE PACKAGE DESIGN OR APPLICATION

- a. ISSUED TO (Name and Address)
Westinghouse Electric Company
LLC (WELCO)
P.O. Box 355
Pittsburgh, PA 15230
- b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION
Westinghouse Electric Corporation application
dated August 29, 2006, as supplemented.

4. CONDITIONS

This certificate is conditional upon fulfilling the requirements of 10 CFR Part 71, as applicable, and the conditions specified below.

5.

(a) Packaging

- (1) Model Nos.: MCC-3, MCC-4, and MCC-5
- (2) Description.

The MCC packages are shipping containers for unirradiated uranium oxide fuel assemblies. The packagings consist of a steel fuel element cradle assembly equipped with a strongback and an adjustable fuel element clamping assembly. The cradle assembly is shock mounted to a 13-gauge carbon steel outer container by shear mounts. The MCC-3 container is closed with thirty ½-inch T-bolts. The MCC-4 and MCC-5 containers are closed with fifty ½-inch T-bolts.

The MCC-3 and MCC-4 containers are permanently equipped with vertical Gd₂O₃ neutron absorber plates that are mounted on the center wall of the strongback. Additional horizontal Gd₂O₃ neutron absorber plates, mounted on the underside of the strongback, are required for the contents as specified.

The MCC-5 container is permanently equipped with both the vertical and horizontal Gd₂O₃ neutron absorber plates. Additional vee-shaped, guided Gd₂O₃ neutron absorber plates are required for the contents as specified.

Approximate dimensions of the MCC-3 packaging are 44½ inches O.D. by 194½ inches long. The gross weight of the packaging and contents is 7,544 pounds. The maximum weight of the contents is 3,300 pounds.

Approximate dimensions of the MCC-4 packaging are 44½ inches O.D. by 226 inches long. The gross weight of the packaging and contents is 10,533 pounds. The maximum weight of the contents is 3,870 pounds.

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5. (a) (2) Packaging (continued)

Approximate dimensions of the MCC-5 packaging are 44½ inches O.D. by 226 inches long. The gross weight of the packaging and contents is 10,533 pounds. The maximum weight of the contents is 3,700 pounds.

(3) Drawings

The MCC-3 packaging is constructed in accordance with Westinghouse Electric Corporation Drawing No. MCCL301, Sheets 1, 2, 3, and 4, Rev. 6.

The MCC-4 packaging is constructed in accordance with Westinghouse Electric Corporation Drawing No. MCCL401, Sheets 1, 2, 3, 4, and 5, Rev. 9.

The MCC-5 packaging is constructed in accordance with Westinghouse Electric Corporation Drawing No. MCCL501, Sheets 1 through 10, Rev. 6.

(b) Contents

(1) Type and form of material

Unirradiated PWR uranium dioxide fuel assemblies with a maximum uranium-235 enrichment of 5.0 weight percent with the following exceptions: 15x15 BW fuel assemblies have a maximum enrichment of 4.65 wt%, and VVER-1000 fuel assemblies have a maximum enrichment of 4.40 wt%.

The fuel assemblies shall meet the specifications given in Westinghouse Drawing No. 648 F15, Rev. 4, and in the following tables of Appendix 1-5 of the application, as supplemented:

Table 1-5.1, Rev. 12*	Fuel Assembly Parameters 14x14 Type Fuel Assemblies
Table 1-5.2, Rev. 12*	Fuel Assembly Parameters 15x15 Type Fuel Assemblies
Table 1-5.3, Rev. 12*	Fuel Assembly Parameters 16x16 Type Fuel Assemblies**
Table 1-5.4, Rev. 12*	Fuel Assembly Parameters 17x17 Type Fuel Assemblies**
Table 1-5.5, Rev. 12*	Fuel Assembly Parameters VVER-1000 Type Fuel Assembly***

* As submitted by letter dated January 24, 2007.

** 16x16 CE fuel assemblies and the 17x17 W-STD/XL fuel assemblies shall be shipped only in the Model No. MCC-4 package.

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5. (b) (1) Contents (continued)

*** VVER-1000 fuel assemblies shall be shipped only in the Model No. MCC-5 package.

(2) Maximum quantity of material per package

Two (2) fuel assemblies

(c) Transport Index for Criticality Control (Criticality Safety Index)

Minimum transport index to be shown on label for nuclear criticality control: 0.4

6. (a) For shipments of 14x14, 15x15, 16x16, and 17x17 OFA fuel assemblies with U-235 enrichments of over 4.65 wt% and up to 5.0 wt%, horizontal Gd_2O_3 neutron absorber plates shall be positioned underneath each assembly. The horizontal absorber plates shall be placed horizontally on the underside of the strongback, as specified in the respective drawings in Condition 5(a)(3) for the MCC-3 and MCC-4 models.
- (b) For shipments of 17x17 STANDARD lattice fuel assemblies (17x17 STD and 17x17 XL) with U-235 enrichments of over 4.65 wt% and up to 5.0 wt%, horizontal Gd_2O_3 neutron absorber plates shall be positioned underneath each assembly. The horizontal absorber plates shall be placed horizontally on the underside of the strongback, as specified in the respective drawings in Condition 5(a)(3) for the MCC-3 and MCC-4 models.
7. Shipments of VVER-1000 fuel assemblies are authorized with U-235 enrichments up to 4.80 wt%.
8. Each fuel assembly must be unsheathed or must be enclosed in an unsealed plastic sheath which may not extend beyond the ends of the fuel assembly. The ends of the sheath may not be folded or taped in any manner that would prevent flow of liquids into or out of the sheathed fuel assembly.
9. The dimensions, minimum Gd_2O_3 loading and coating specifications, and acceptance testing of the neutron absorber plates shall be in accordance with the "Gd₂O₃ Neutron Absorber Plates Specifications," Appendix 1-7, Rev. 12, of the application, as supplemented. The minimum Gd_2O_3 coating areal density on the vertical and horizontal neutron absorber plates shall be 0.054 g-Gd₂O₃/cm². The minimum Gd_2O_3 coating areal density on guided neutron absorber plates shall be 0.027 g-Gd₂O₃/cm².
10. In addition to the requirements of Subpart G of 10 CFR Part 71:
- (a) Each package shall be prepared for shipment and operated in accordance with the "Routine Shipping Container Utilization Summary Operating Procedures," in Chapter 7 of the application, as supplemented; and
- (b) Each package shall be tested and maintained in accordance with the "Acceptance Tests, Maintenance Program, and Recertification Program," in Chapter 8 of the application, as supplemented, and as specified in the respective drawings in Condition 5(a)(3) for the MCC-3, MCC-4, and MCC-5 models.

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11. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR §71.17.
12. Revisions No. 14 of this certificate may be used until January 31, 2008.
13. Expiration date: March 31, 2012.

REFERENCES

Westinghouse Electric Corporation application dated August 29, 2006.

Supplement dated: September 25, November 9, 2006, and January 24, 2007.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Meraj Rahimi

Meraj Rahimi, Acting Chief
Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

Date: February 2, 2007



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Pipeline and
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Safety Administration

400 Seventh Street, S.W.
Washington, D.C. 20590

CERTIFICATE NUMBER: USA/9239/AF-85, Revision 16

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